

Question II.A.10 – Response of tw telecom holdings, llc

tw telecom holdings, llc submits the attached documents in response to questions

II.A.10.

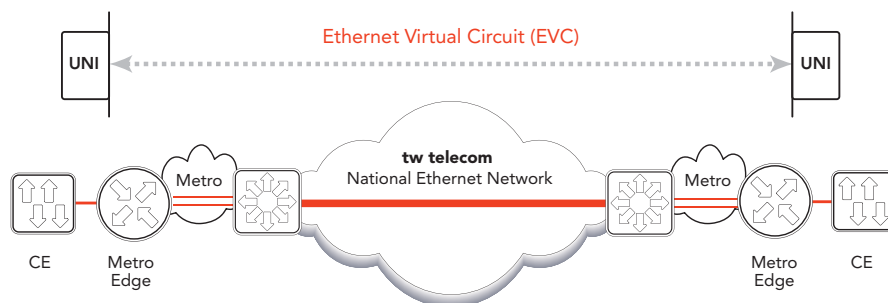


E-Line: Ethernet Line



E-Line is the next generation of Ethernet WAN solutions. **tw telecom's** E-Line service is a fully managed, platform-agnostic end-to-end Ethernet solution including premise equipment, metro and long haul connectivity. E-Line gives you the security and simplicity of private lines without expensive equipment and inconvenient bandwidth limitations. By using Metro Ethernet Forum (MEF) standards to deliver point-to-point and point-to-multipoint solutions, E-Line offers the plug and play simplicity of Ethernet, plus the kind of scalability, flexibility and efficiency businesses need for a competitive edge. Whether enterprise software, data replication for business continuity, or cloud computing, E-Line enables your most critical applications to all your locations, whether across town or across the country.

Point-to-Point E-Line



Single Ethernet Virtual Circuit (EVC) delivers bandwidth between two User Network Interfaces (UNI) within or between multiple metro areas.

- Easily scales from 2 Mbps to 10 Gbps
- 99.999% protected uptime SLA or 99.9% unprotected uptime SLA

Business Benefits

Familiarity:

Ethernet is a technology your staff already knows and understands

Scalability:

From 2Mb to 10 Gig, easy to add additional sites

CPE Flexibility:

Simple Ethernet handoffs that work with your existing equipment

Reliability:

Protected E-Line service is backed by a 99.999% uptime SLA. The network is proactively monitored 24x7 and redundant power is standard for edge equipment.

Control and Flexibility:

View bandwidth utilization and key performance metrics, adjust bandwidth on the fly and take advantage of additional Intelligent Network

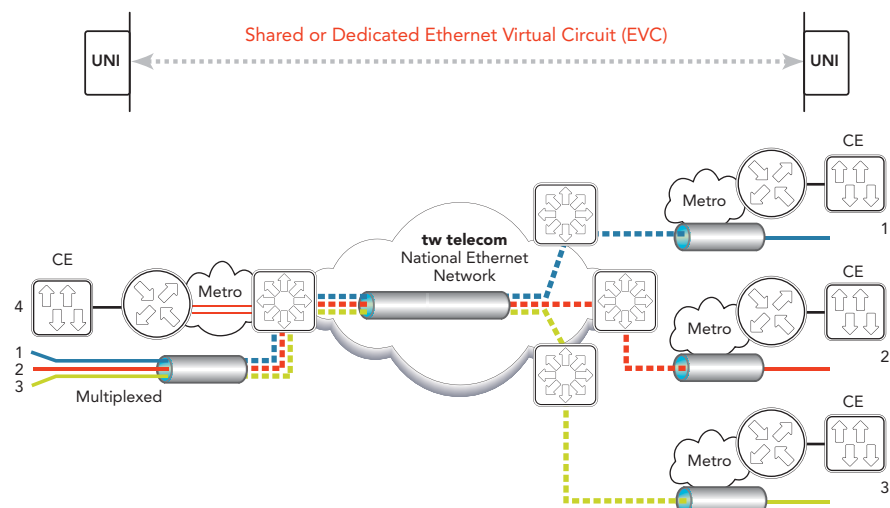
Cost Effective:

Lower per megabit bandwidth cost compared to legacy services.

Customer Service:

All **tw telecom** services are backed by our world class customer service and passionate people who listen, collaborate and get things done.

Point-to-MultiPoint E-Line



Virtual Local Area Networks (VLAN) switch traffic across multiple EVCs to the appropriate locations within or between multiple metro areas.

- Bandwidth can be shared or dedicated
- Host location UNI can be oversubscribed (up to 4:1) in a shared configuration
- Easily scales from 2 Mbps to 10 Gbps
- 99.999% protected uptime SLA



tw telecom's E-Line services are Metro Ethernet Forum (MEF) certified.

Intelligent Network

Intelligent networks give you the visibility, flexibility and control you need to solve business problems and enable next generation IT strategies.

Components of tw telecom's Intelligent Network include:

- **Visibility:** End-to-end and segment-by-segment real time visibility of key performance metrics by location and class of service.
- **Flexibility:** Dynamic Capacitysm enables real-time, on the fly bandwidth adjustments to address fluctuating traffic demands.
- **Control:** Application Aware Networking* provides real-time, granular visibility of application traffic and the ability to adjust prioritization by specific application to optimize performance.

This unique combination of network intelligence allows **tw telecom** E-Line customers to forecast, plan and adapt their networks to harness their mission critical applications more efficiently.

* Future capability

About tw telecom

tw telecom delivers the most advanced telecommunications solutions on the market to a wide spectrum of business and organizations across the United States. Since 1993, we have built a legacy of success through exceptional customer care, remarkable product and powerful networks. These strengths enable us to deliver scalable solutions that help customers improve their business metrics. For more information please visit www.twtelecom.com.

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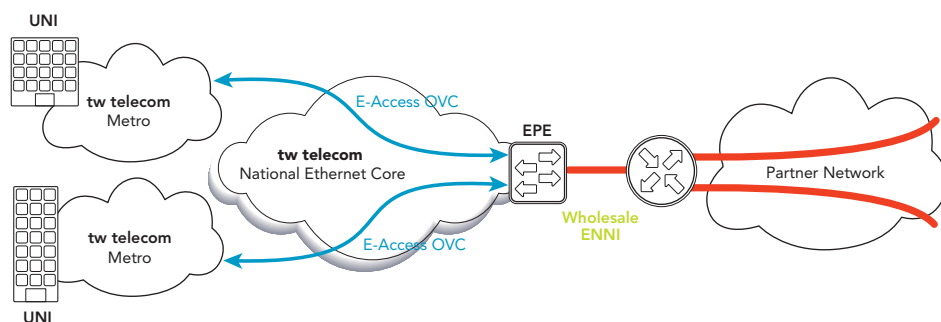
E-Access: Ethernet Access



Ethernet Access (E-Access) with an external network-to-network interface (ENNI) provides carrier, application, and data center service providers with a single point of access into **tw telecom's** National Ethernet footprint.

E-Access delivers the latest solution in **tw telecom's** next generation Ethernet suite. E-Access includes an easily scalable set of advanced features and functionality with modular design parameters which allow for various configuration options. The E-Access solution is made up of the ENNI, the E-Access operator virtual connection (OVC) and the user-network-interface (UNI) or another ENNI owned by the same service provider.

By using Metro Ethernet Forum standards to deliver these solutions, E-Access offers the plug and play simplicity of Ethernet, plus the scalability, flexibility and efficiency a service provider needs for a competitive edge.



Ethernet Access from key interconnect points to anywhere in the network

- Point-to-point from an ENNI to any other location in any national Ethernet-enabled market.
- Platform-agnostic at the edge.
- EPL and EVPL – shared and dedicated options from a single interface.
- Fully transparent implementation of VLANs.
- MEF-compliant and standardized.
- Redundant power at customer premises.
- Secure, reliable network with 24 x 7 x 365 monitoring.
- E-Access service is backed by a 99.999% availability SLA.

E-Access

- Instant access to the third largest Ethernet footprint in the U.S.
- “Hub and spoke” service from key aggregation interconnection points.
- Ethernet Virtual Private Line (EVPL) and Ethernet Private Line (EPL) options available from the same hub.
- 2Mbps to 10Gbps.
- Protected switching.
- Redundancy, resiliency options available.
- Carrier grade “hub” design choices and templates.

ENNI

- 1Gbps or 10Gbps speeds available.
- Up to 1,000 Ethernet connections possible.
- Greater scale without associated space and power per service.
- Unlimited VLAN tag usage and selection per service instance.
- Direct connection into the **tw telecom** National Ethernet Core.
- Available in many key carrier hotels, data centers, and **tw telecom** IP POPs.



How tw telecom's E-Access can benefit your business:

- Instant access to the 3rd largest Ethernet footprint in the U.S. with **tw telecom's** advanced Ethernet services portfolio and Intelligent Network features.
- Extends the reach of your entire voice, Internet, and data services portfolio.
- Direct connect to the national Ethernet core; no reach restrictions based on metro design or parameters.
- A more open-ended and modular approach to Ethernet access; many options, templates, and build combinations available to suit a wide array of design or cost-conscious specifications.
- Access to all next generation data services product and feature lines.

tw telecom's E-Access is Leading the Way:

- **First to market** – we're the first carrier to bring to market an MEF defined wholesale Ethernet product with definitions for a point-to-point service over an external network-to-network interface.
- **Award winning** – our E-Access solution received the 2013 Light Reading Leading Lights Award for Most Innovative Ethernet/Optical Solution of the Year.



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tw telecom inc., provides managed network services, specializing in business Ethernet and transport data networking, Internet access, voice, VoIP, VPN and security, to enterprise organizations and communications services companies throughout the U.S. As a leading provider of integrated and converged network solutions, and its own Intelligent Network capabilities, tw telecom delivers customers overall economic value, quality, service, and improved business productivity.

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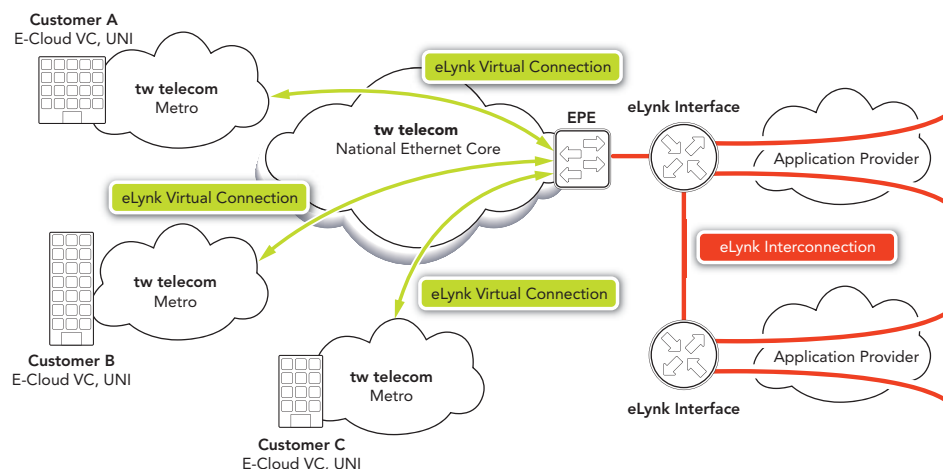
The eLynkSM portfolio is a next generation, private data service that securely connects multiple end user businesses to one centralized cloud or Application Provider (AP). The portfolio joins all parties into a certified private network that heavily utilizes our advanced Intelligent Network suite of features for Ethernet and data services.

eLynkSM is made up of an eLynk virtual Connections, from any tw telecom connected location, into an eLynk Interface. eLynk elements are pre-defined according to the application provider's specifications and are certified, tested and optimized for the provider's applications. This delivers a seamless interconnection, removes the complexity for customers, and makes for a repeatable and scalable integration.

For the AP, the eLynk Interface provides the advantage of a single interconnect for their customers without the added expense of owning the private connection or the interconnection in the data center. Providers may also utilize multiple eLynk Interfaces as a method for replication and redundancy between their own eLynk Interfaces or between partners who also have eLynk Interfaces.

eLynkSM is Ideal For The Connected Enterprise:

- Application Service Provider can connect users directly to their critical business application and provide a secure, reliable, scalable interface.
- Data center owners can consolidate disparate tenant applications onto a single interface that connects multiple end user customers.
- Public sector organizations can create federations of service, allowing different entities to access centralized resources with individualized billing for each member
- Medical organizations can create a private shared network between hospitals, doctor's offices and specialists to pass large bandwidth records and still be compliant





eLinkSM Benefits:

- Single point of Interconnect to any customer connected to **tw telecom**'s National Business Ethernet Network.
- Predictable connectivity to your cloud
- Rapidly scalable bandwidths ranging from 2Mbps to 10Gbps.
- Simplified and cost effective model
- Customers can utilize existing National Ethernet components
- Flexible solution for APs and Customers utilizing all elements of the eLink Portfolio
- Visibility and control of the network with **tw telecom**'s Intelligent Network capabilities

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tw telecom exclusive capabilities available on IP VPN:

Dynamic Capacity® provides Enterprises with the flexibility to double or triple their network bandwidth automatically for pre-scheduled or unplanned events, without additional internal resources or downtime.

Dynamic Prioritization provides Enterprises with the ability to control class-of-service (CoS) priorities across private network solutions with no downtime or network provider involvement.

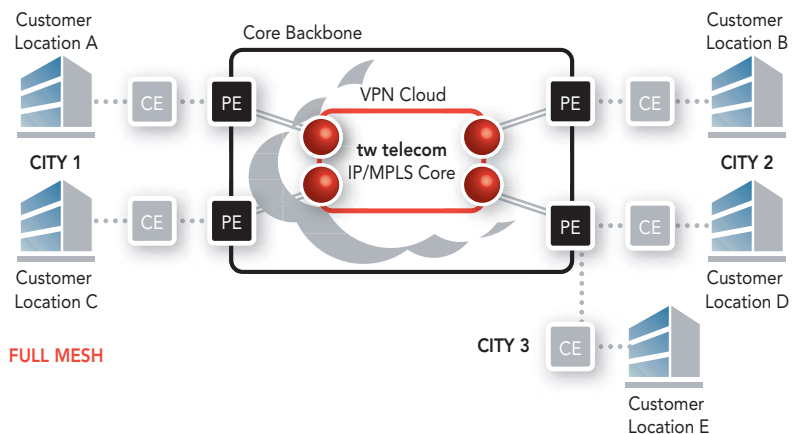
In today's evolving business environments, Enterprises require a reliable, scalable and secure Virtual Private Network (VPN) solution that supports workloads and applications.

IP VPN

tw telecom's IP VPN offers Enterprises seamless connectivity to locations across the U.S. with the same level of privacy and greater efficiency than legacy private line, ATM or Frame Relay connections.

This allows businesses to maintain current network protocols, prioritize data by traffic type and ensure privacy with physical, logical and operational levels of security.

tw telecom's IP VPN extends the business IP-based network and applications cost-effectively across the country to support the business growth challenges.



- **Agility to Meet Business Needs:** Respond to the dynamic business needs in today's IT environment.
- **Increase Productivity:** Perform all business functions from any location, improving efficiencies and overall company performance.
- **Accelerate Growth:** Seamlessly increase bandwidth where and when its required and adds sites as the Enterprise expands into new markets.

With **tw telecom's** IP VPN Premium Plus solution, Enterprises manage multiple applications by prioritizing traffic within five CoS profiles.



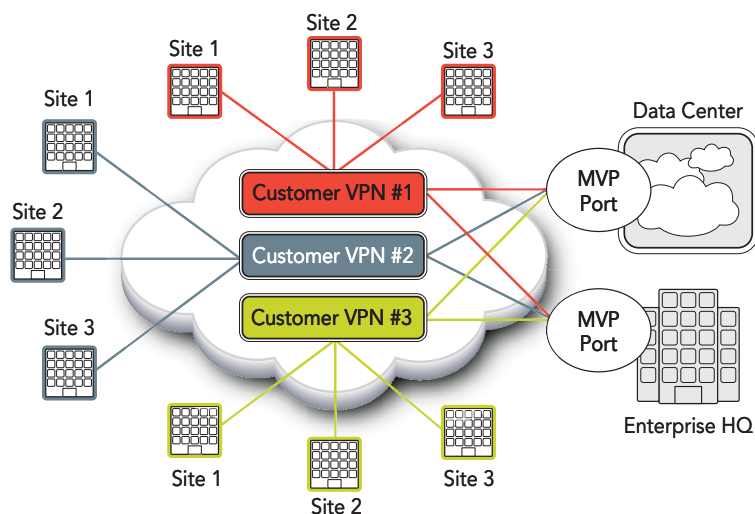
IP VPN: Multi-VPN Port Service



Are you seeking a solution that will give your data center or headquarters the ability to more easily manage multiple IP VPN networks? Are you seeking a solution that saves you from ordering multiple IP VPN circuits? Multi-VPN Port Service (MVP) gives you the ability to have multiple IP VPNs via a single port handoff.

tw telecom Multi-VPN Port Service gives you a single Ethernet handoff that supports multiple IP VPNs:

- Ideal for distributed organizations with centralized resource requirements
- Large enterprises with service or business unit segregation



Multi VPN Port Benefits:

- **Scalability** – Highly scalable to grow with your business. Support up to 50 IP VPN connections over a single 1 Gbps port.
- **Increased functionality** – Segment network paths without using multiple network devices.
- **Increased network security** – Eliminate the complexity of managing end-to-end traffic segregation.
- **Cost Savings** – Maintain multiple virtual circuits on one port, without having to buy/manage separate IP VPN circuits.
- **Simplicity** – Increase your efficiency and operational management.
- **Flexibility** – Allows multiple virtual topologies to leverage a single infrastructure.
- **Adaptability** – Integrate the networks of acquired companies into a shared LAN and infrastructure easily, with little or no interruption to regular business processes.

Multi-VPN Port Service
delivers the simplicity of a single Ethernet handoff and anywhere connectivity to provide the security, scalability, and cost savings to move your business forward.



Multi VPN Port features delivers valuable functionality across the network, including:

- Single high-capacity 1 Gbps or 10 Gbps port network interconnects that logically separates traffic across multiple IP VPNs for on-net, unmanaged locations.
- Create separate virtual private networks (IP VPNs) for departments/customers.
 - Applicable to many places in the network including campus, wide-area network (WAN), branch office and data center applications
 - Ability to have Multi-VPN via VLANs at the data centers, hub sites, and eco-systems
- Web Portal for MVP and VPN Connectors:
 - View usage statistics by VPN Connector
 - View aggregate usage statistics for the Multi-VPN Port
 - Latency/jitter/packet loss for each VPN Connector
 - CoS statistics available for each VPN Connector
- Premium CoS included with MVP
- Proactive monitoring and auto-ticketing with MVP
- Deliver IP address flexibility for any given IP VPN, regardless of whether it overlaps or conflicts with other IP VPNs' address space.



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Co-Location Solutions



tw telecom's co-location facilities support business continuity needs with a secure environment, and provide dedicated space for your equipment and data storage. Our co-location service frees up your staff and resources so you can remain focused on your critical business needs.

When you store equipment or house your company's data in one of our co-location facilities, you receive a back-up site for your mission critical data as well as a gateway to the industry's most robust local and regional optical networks.

You can also utilize our co-location facilities in conjunction with any of **tw telecom's** valuable data services, including Internet Access, Storage Transport, Private Line, Metro Ethernet and IP VPN. We'll work with you to design and customize a solution that best fits your needs.

Disaster Recovery Services

Few assets are more integral to your business than your communications network, particularly when disaster strikes. With **tw telecom** as your business continuity partner, your company can minimize downtime and stay connected to all of your company's stakeholders when it matters most.

tw telecom partners with you by offering flexible, cost-effective co-location solutions that your business can use as back-up sites for data storage, or as remote facilities utilized only in the event of an emergency.

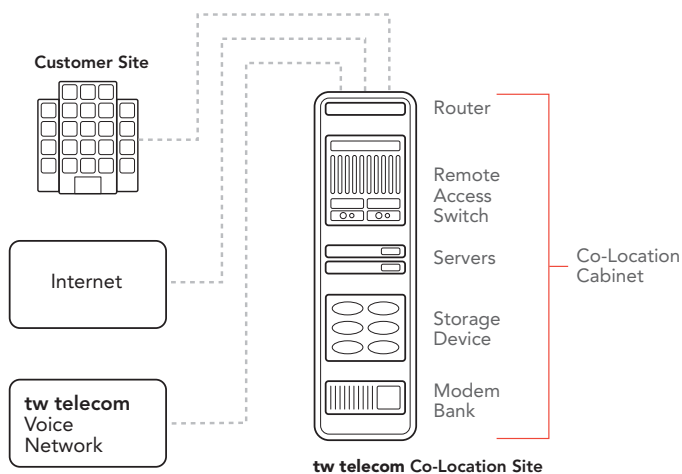
Rely on **tw telecom** for your disaster recovery needs in order to:

- Diversify providers
 - Provide system redundancy
 - Ensure network security
 - Maintain your data in a convenient location
 - Benefit from the superior reliability of **tw telecom's** network
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tw telecom's Customer Site and Co-Location Network



Why tw telecom?

Our networks have successfully weathered all kinds of disasters, and have helped businesses across the country overcome emergencies that threaten to disrupt operations.

National Operations Centers:

tw telecom's two National Operations Centers are at the heart of our service delivery excellence promise. Our NOCs proactively monitor our network 24 hours a day, 7 days a week, 365 days a year. Because we own our networks, we are able to seamlessly re-route traffic in the event of a disruption.

Our Fiber: Our SONET-based networks include 100% fiber optic, fully redundant, self-healing digital rings. Diverse routing is standard on most of our metro services. These state-of-the-art networks provide reliability that traditional lines cannot.

Co-Location Features

Our co-location sites offer secure access, redundant power supplies, dual HVAC, and fire detection and prevention systems. We offer flexible space options including open racks, lockable cabinets, and caged floor space. Our facilities are conditioned with AC and DC power options to meet your power requirements and we provide 24-hour operations staff.

With tw telecom's co-location facilities you receive:

- Dedicated co-location space
- A climate-controlled environment
- Redundant power supplies
- Secure access
- Redundant entrance facilities
- A reliable back-up site for data storage



Wavelength Service



Today's Business Demands, Meet Our Solution

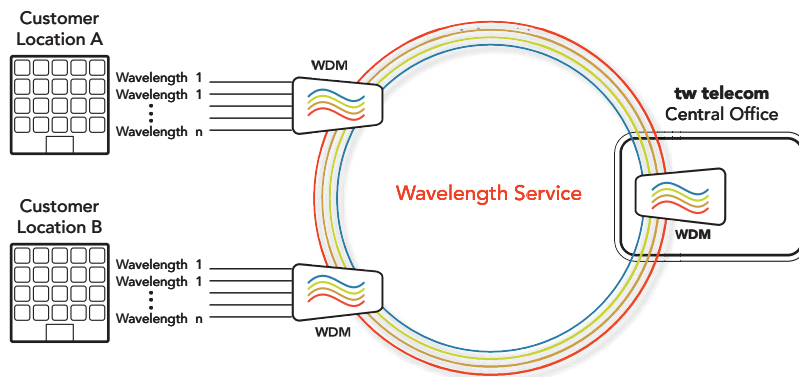
- > Skyrocketing volume of customer transactions
- > Delivery of vital applications and data
- > Enabling and accessing the Cloud

Do these technological demands sound familiar to your business? The pace of today's world is not slowing down, putting your need for more bandwidth as a critical factor in preserving the success of your business. **tw telecom** understands the significance of your ever increasing need for bandwidth and is prepared to meet that need.

tw telecom's Wavelength service is the fastest, safest, and most reliable way to move your critical data. The service uses advanced Wave Division Multiplexing (WDM) technology to provide a highly reliable data network. Our Wavelength service can be configured with various combinations of network protection and framing options to support your ever increasing needs.

We Understand Your Business Communications Are Critical

We provide a cost effective service to deliver your data at high bandwidths with the reliability and security you deserve. With both national and local customer support teams, we have you covered, 24/7/365—delivering the most sought-after customer experience in the industry.



- 2.5G, 10G, 40G and 100G solutions
- Point-to-point connections eliminate congestion and dedicate bandwidth
- Port-to-port security and privacy
- Storage back-up and recovery
- Enables very high-bandwidth connects to the Cloud
- Fully managed 24/7/365 by **tw telecom** professionally trained technicians

Business Benefits

Secure: The entire transmission path and bandwidth is completely dedicated to you, for exclusive use.

Reliable: Backed by a 99.99% uptime SLA.

Managed: Proactively monitored 24/7/365 by two National Operations Centers.



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